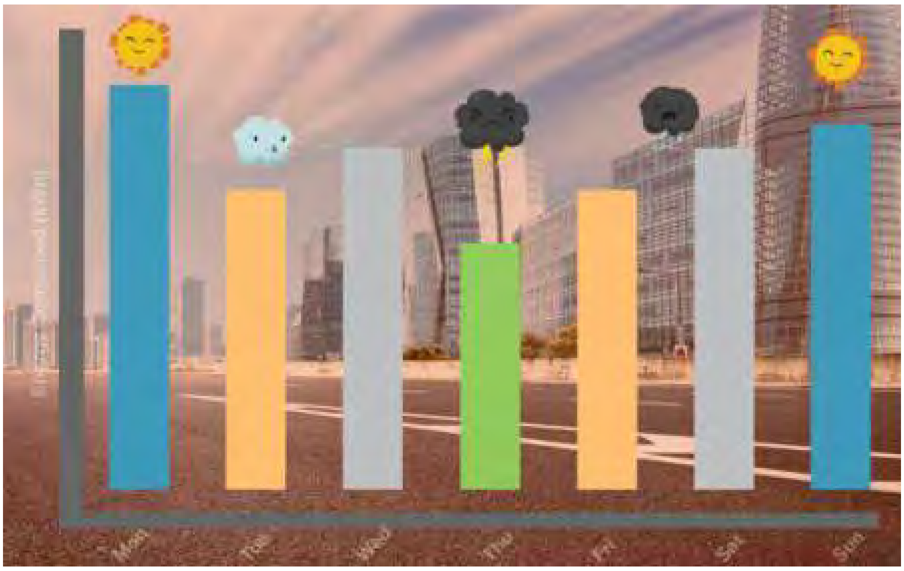
Mr. Gaurav Burman,
Vice President & Country President,
75F

Why Normalize Energy Consumption for Weather?

'Normalizing' for weather or 'correcting' for it allows you to adjust your energy- consumption figures to factor out the variations in outside air temperature so you can then compare the normalized data fairly.

Energy costs are on the rise, and so is the demand for energy. As a result, reducing the energy consumption of your bricks and mortar is fast becoming a no-brainer for any business. After all, buildings consume 40% of the world's energy of which approximately 50% is wasted due to inefficient use.

The first step to managing energy is, of course, measuring energy efficiency. As James Harington aptly said, "Measurement is the first step that leads to control and eventually to improvement. If you can't measure something, you can't understand it. If you can't understand it, you can't control it. If you can't control it, you can't improve it."



Measuring Energy Efficiency in Buildings

Typically, the level of energy efficiency in a building is measured by dividing energy consumed with the floor area of the building commonly referred to as Energy Use Intensity (EUI):

EUI = Energy Consumed / Built area

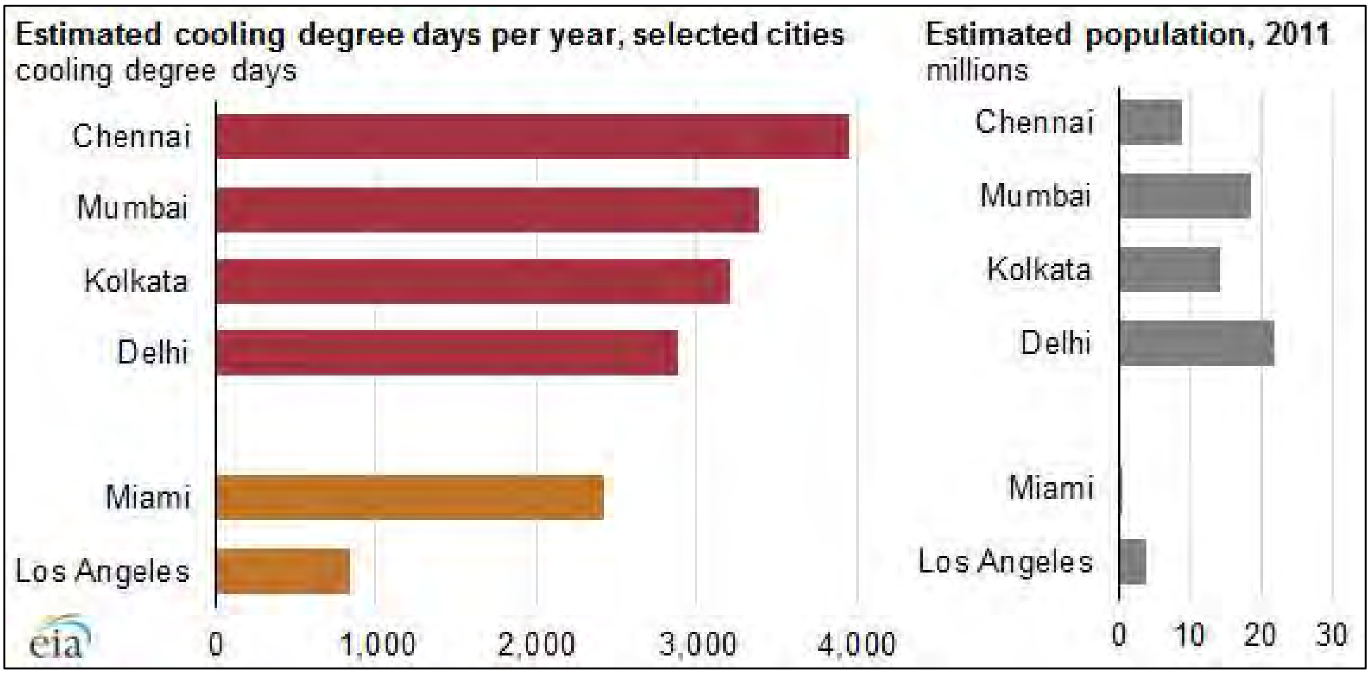
Essentially, EUI represents a building's energy use as a function of its size or other characteristics and has become the standard of energy efficiency measurement over the past decade.

However, as versatile as this approach is, it presents an incomplete picture. As we well know, energy consumption in heated or cooled buildings tends to depend on the ambient air temperature - the cooler the outside air temperature, the more energy it takes to heat a building and the warmer the outside air, the more energy it takes to cool a building.

EUI, unfortunately, does not account for this influence of outside air temperature rendering it inadequate.

What is 'normalizing' energy consumption for weather?

Would you want to understand the energy consumption of your building year-on-year accurately? Or simply compare energy consumption between two or more buildings? In each of these



Source: U.S. Energy Information Administration, based on Energy Policy (Note: Cooling degree days shown here are based on a 65 °F (18 °C) base temperature.)

cases, the only way to get an apples-to-apples comparison is to have a common baseline to gauge energy consumption from different periods or places with different weather conditions. Enter "normalizing" energy consumption for weather differences!

'Normalizing' for weather or 'correcting' for it allows you to adjust your energy- consumption figures to factor out the variations in outside air temperature so you can then compare the normalized data fairly.

Weather Normalizing energy consumption = (Sum Total of HDD + CDD for a period)/ kWh used by the building during the same period

Where HDD and CDD represent Heating Degree Days and Cooling Degree Days respectively.

Heating and cooling degree days (HDD and CDD) aren't technically "days" at all. They're a unit of measurement adopted by organizations such as ASHRAE as the industry standard for weather models. Simply put, they essentially indicate how hot (or cold) it is outside for a given day and for how long it was at that temperature.

Normalizing for weather gives you a more precise representation of energy efficiency of a building. It allows you to identify energy wastage and benchmark your building's performance by period or against another building.

Does weather normalizing give you a more accurate picture of your building's performance?

Normalizing for weather gives you a more precise representation of energy efficiency of a building. It allows you to identify energy wastage and benchmark your building's performance by period or against another building.

Let's consider two offices of similar size in Mumbai and Delhi. Enveloped by completely different geographic realities such as ambient temperatures, diurnal range of temperatures, humidity, etc. each building consumes energy differently to maintain a comfortable indoor temperature of 23-degree Celsius throughout the year.

Let's say that over one month at the building in Delhi you had 15 heating degree days and 500 cooling degree days, totaling 515 degree days. Over that same month, the building used 50,000 kWh. 50,000 kWh divided by 515 degree days equals 97 kWh/degree day.

Say the second building of comparable size in Mumbai consumed 100,000 kWh over the same period. Seemingly a much bigger energy user than the first building. But it had 80 heating degree days and 1,100 cooling degree days. 100,000 kWh divided by 1,180 degree days equals just 84 kWh/degree day, significantly less than the first building. You could reasonably infer that the 84 kWh/degree day building is operating more efficiently than the 97 kWh/degree day building when you account for the influence of weather.

Discounting the impact of weather on your building's energy consumption is a recipe for failure in energy savings. Your energy savings plan is only as effective as it is comprehensive, after all!